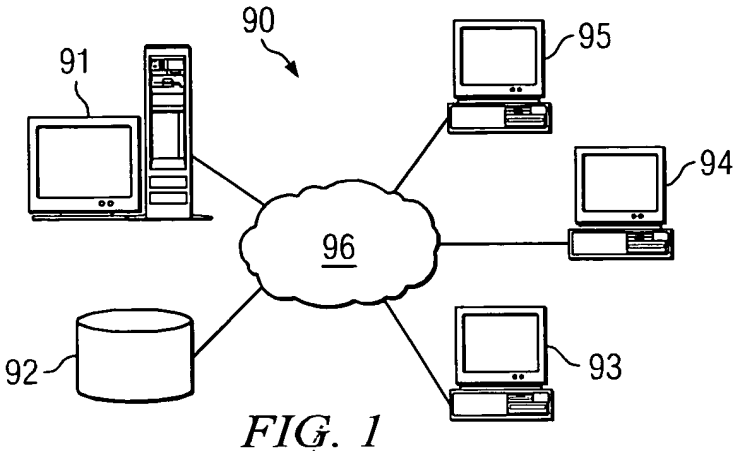
90
91
95
94
96
92
93

FIG. 1

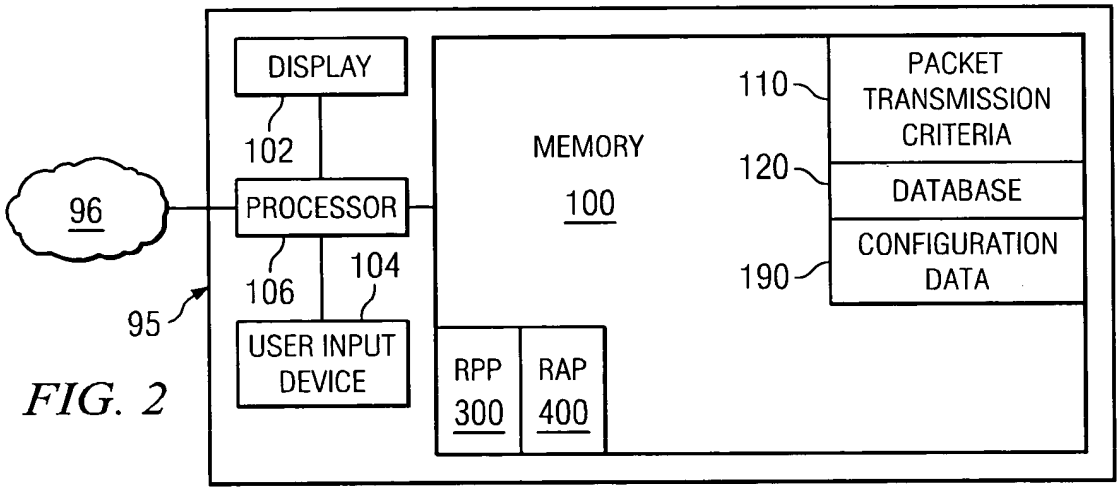
DISPLAY
102
96
PROCESSOR
106
104
95
USER INPUT DEVICE
MEMORY
100
110
PACKET TRANSMISSION CRITERIA
120
DATABASE
190
CONFIGURATION DATA
RPP
300
RAP
400

FIG. 2

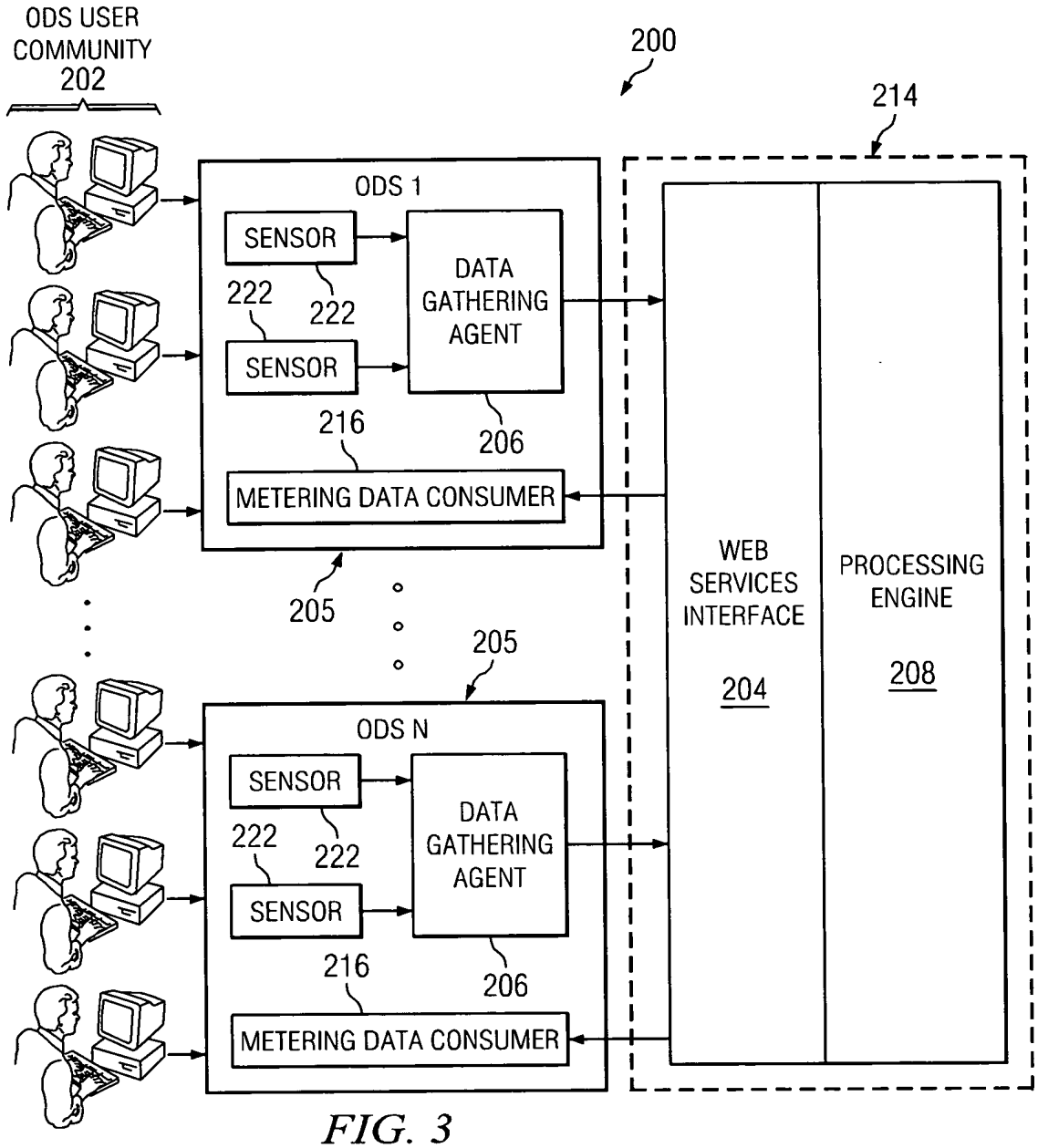
ODS USER COMMUNITY 202
200
214
ODS 1
SENSOR
222
222
SENSOR
DATA GATHERING AGENT
216
206
METERING DATA CONSUMER
205
205
ODS N
SENSOR
222
222
SENSOR
DATA GATHERING AGENT
216
206
METERING DATA CONSUMER
WEB SERVICES INTERFACE
204
PROCESSING ENGINE
208

FIG. 3

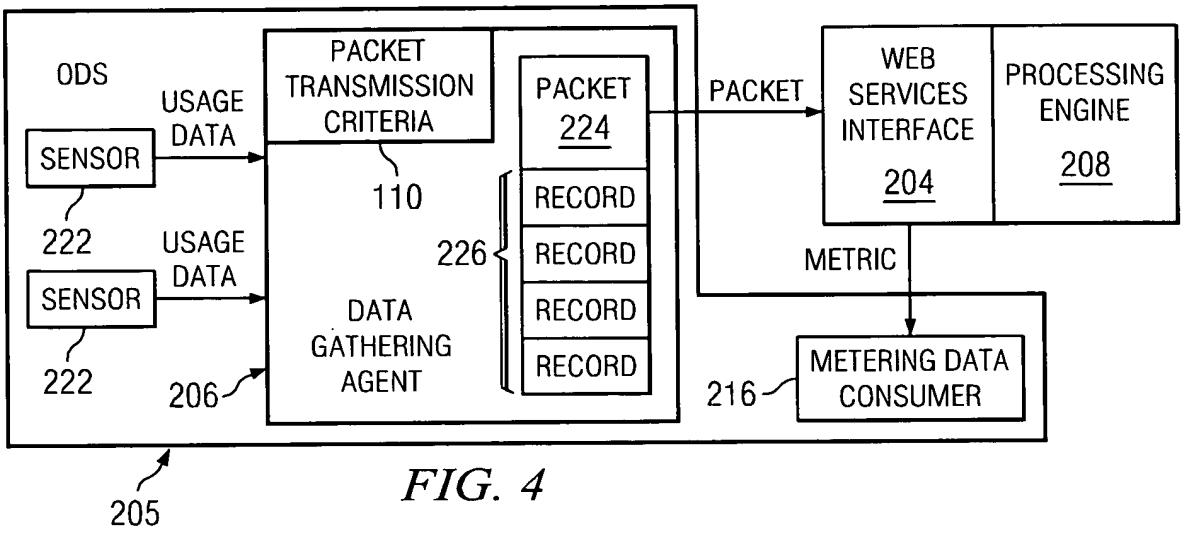

FIG. 4

226

	FIELD		DESCRIPTION	REFERENCE SYMBOL
228 REQUIRED FIELDS	RESOURCE ID	232	IDENTIFIES WHAT IS BEING MEASURED	RId
	USER ID	234	IDENTIFIES ACCOUNT OR USER OR THE RESOURCE	UId
	MEASUREMENT VALUE	236	THE MEASUREMENT ON THE RESOURCE	MV
	UNIT OF WORK	238	IDENTIFIES A GROUP OR SET THE RECORD BELONGS TO	UOW
	CLOSE UNIT OF WORK	240	FLAG USE TO INDICATE CLOSURE OF SET	UOWF
	OTHER	242	SOME OTHER FIELDS ARE REQUIRED IN THE IMPLEMENTATION SUCH AS TIME STAMPS AND SOME AUDITING FIELDS	
230 ATTRIBUTES	Name1	244	ANY NUMBER OF NAME, VALUE PAIRS TO ASSOCIATE ADDITIONAL DATA WITH THE RECORD	N
	Value1	246		V
	⋮	⋮	⋮	⋮ A
	NameN	244		N
	ValueN	246		V

FIG. 5

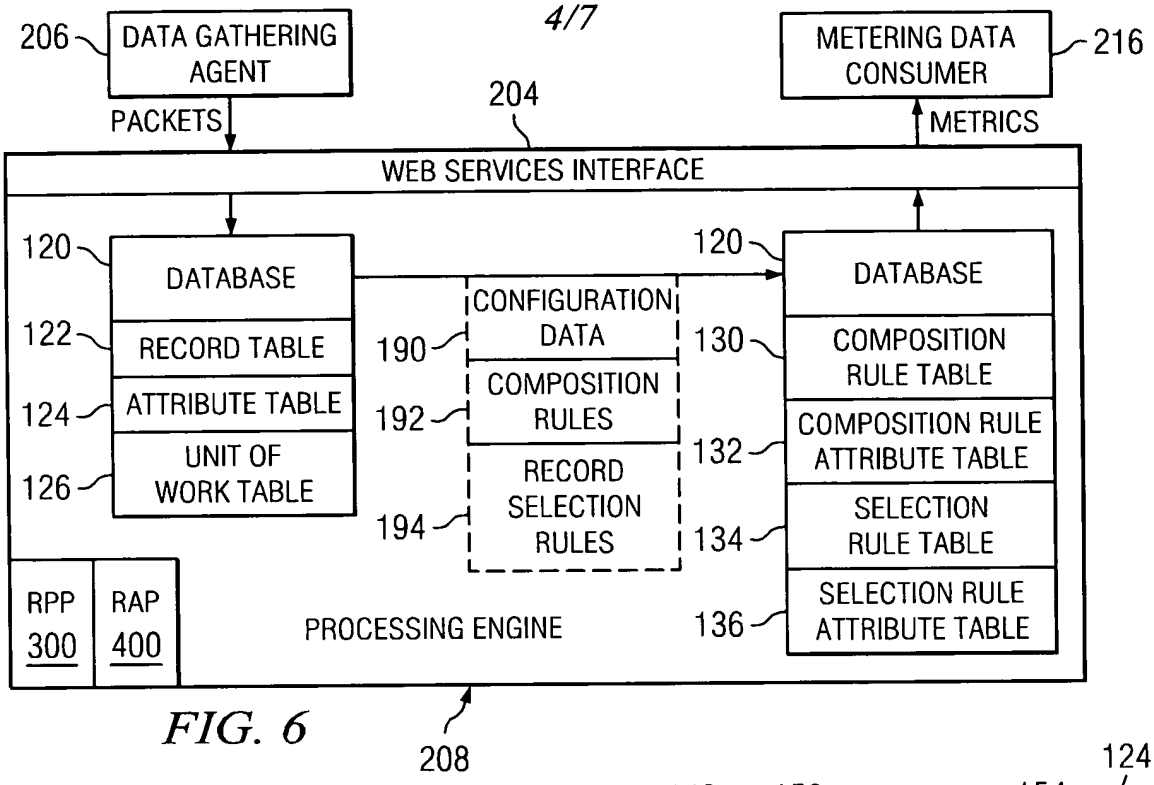

FIG. 6

140 MId (Msmt ID)	142 RId	144 UId	146 MV	148 UOW	150 RULE ID
534	101	JOE	10	22	NULL
535	100	AL	5	23	NULL
536	101	JOE	15	22	NULL
537	101	JOE	10	31	NULL
538	101	AL	10	22	NULL
539	100	JOE	5	31	NULL

122

FIG. 8

124

140 MId	152 NAME	154 VALUE
534	SENDER	Joe@white.com
534	RECEIVER	Barry@black.com
534	RECEIVER	Charlie@green.com
-	-	-
539	SENDER	Joe@white.com
539	RECEIVER	Charlie@green.com

FIG. 9

148 UOW	156 STATE
22	OPEN
23	CLOSED
-	-
31	OPEN
32	CLOSE PENDING

126

FIG. 10

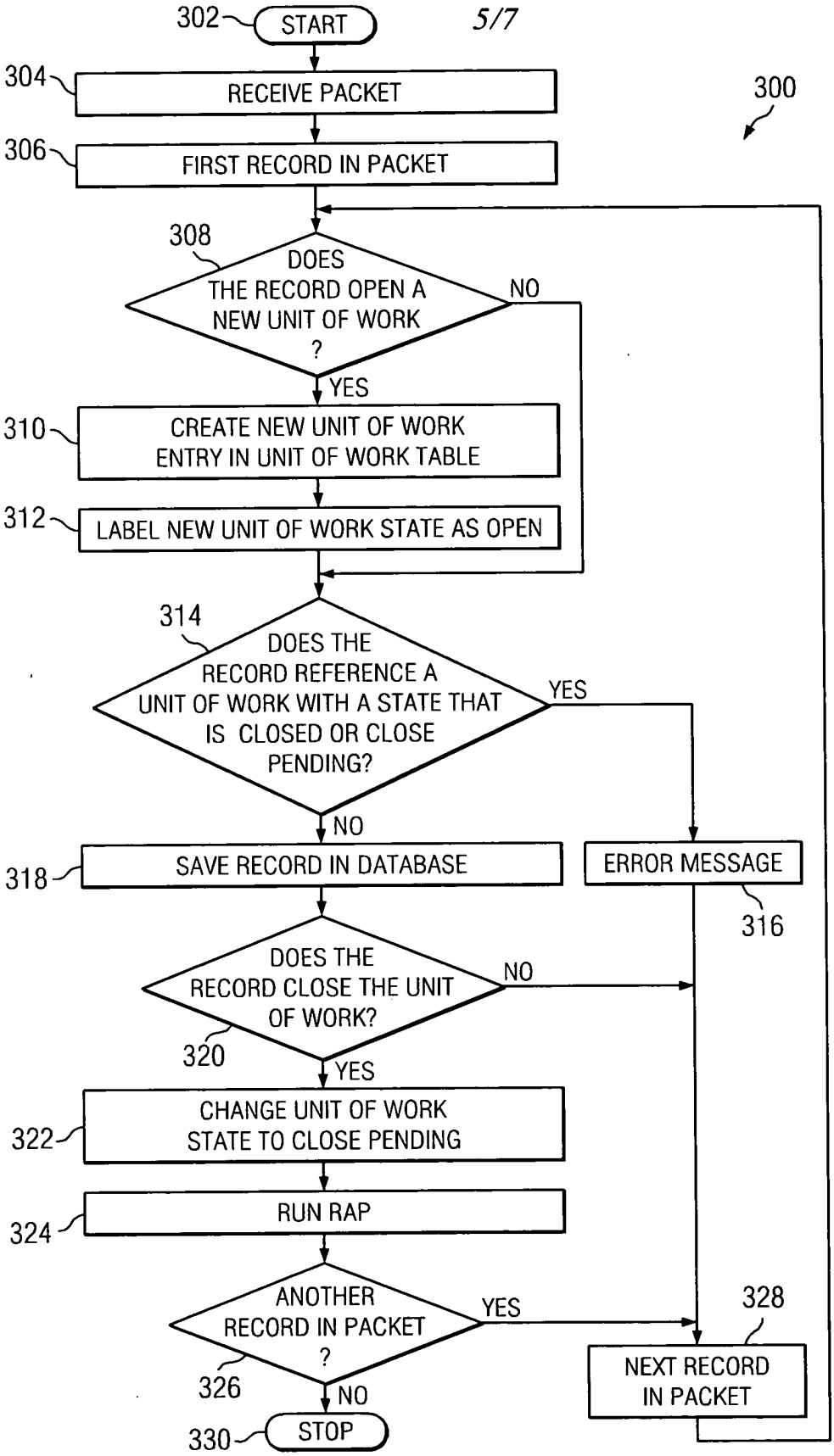
302
START
304
RECEIVE PACKET
300
306
FIRST RECORD IN PACKET
308
DOES THE RECORD OPEN A NEW UNIT OF WORK ?
NO
YES
310
CREATE NEW UNIT OF WORK ENTRY IN UNIT OF WORK TABLE
312
LABEL NEW UNIT OF WORK STATE AS OPEN
314
DOES THE RECORD REFERENCE A UNIT OF WORK WITH A STATE THAT IS CLOSED OR CLOSE PENDING?
YES
NO
318
SAVE RECORD IN DATABASE
ERROR MESSAGE
316
DOES THE RECORD CLOSE THE UNIT OF WORK?
NO
320
YES
322
CHANGE UNIT OF WORK STATE TO CLOSE PENDING
324
RUN RAP
ANOTHER RECORD IN PACKET ?
YES
328
326
NO
NEXT RECORD IN PACKET
330
STOP

FIG. 7

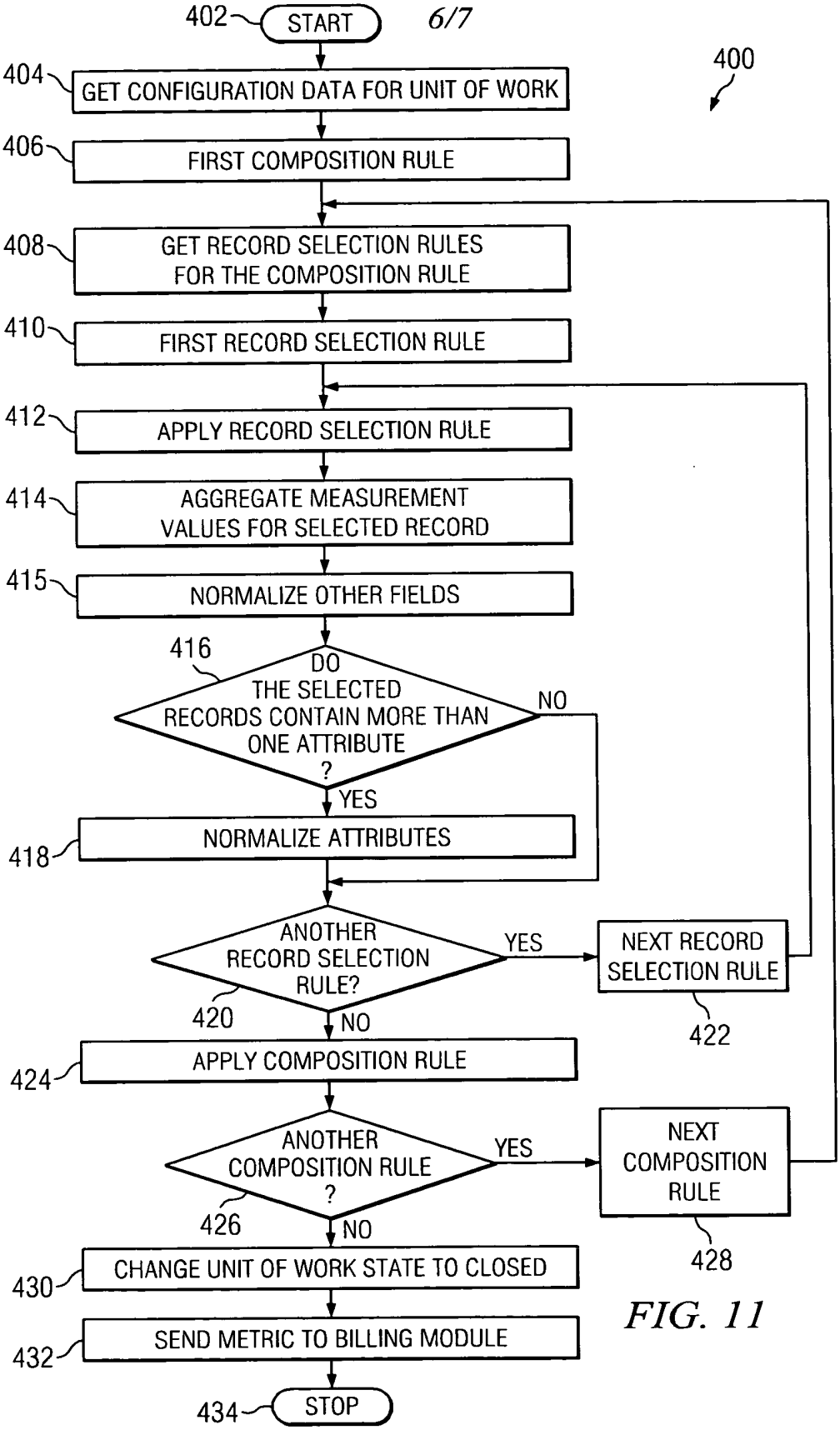
400
402
START
404
GET CONFIGURATION DATA FOR UNIT OF WORK
406
FIRST COMPOSITION RULE
408
GET RECORD SELECTION RULES FOR THE COMPOSITION RULE
410
FIRST RECORD SELECTION RULE
412
APPLY RECORD SELECTION RULE
414
AGGREGATE MEASUREMENT VALUES FOR SELECTED RECORD
415
NORMALIZE OTHER FIELDS
416
DO THE SELECTED RECORDS CONTAIN MORE THAN ONE ATTRIBUTE ?
NO
YES
418
NORMALIZE ATTRIBUTES
ANOTHER RECORD SELECTION RULE?
YES
NEXT RECORD SELECTION RULE
422
420
NO
424
APPLY COMPOSITION RULE
ANOTHER COMPOSITION RULE ?
YES
NEXT COMPOSITION RULE
428
426
NO
430
CHANGE UNIT OF WORK STATE TO CLOSED
432
SEND METRIC TO BILLING MODULE
434
STOP

FIG. 11

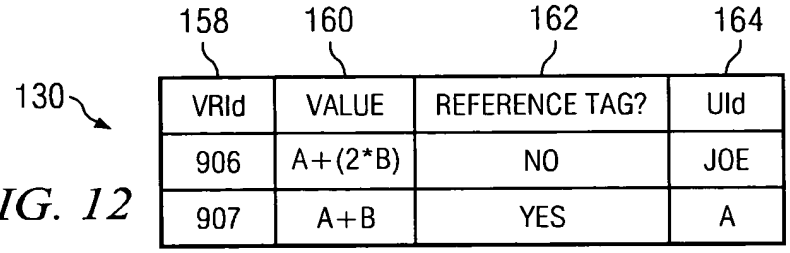

FIG. 12

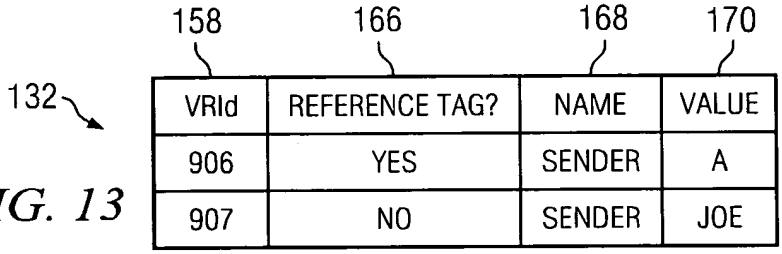

FIG. 13

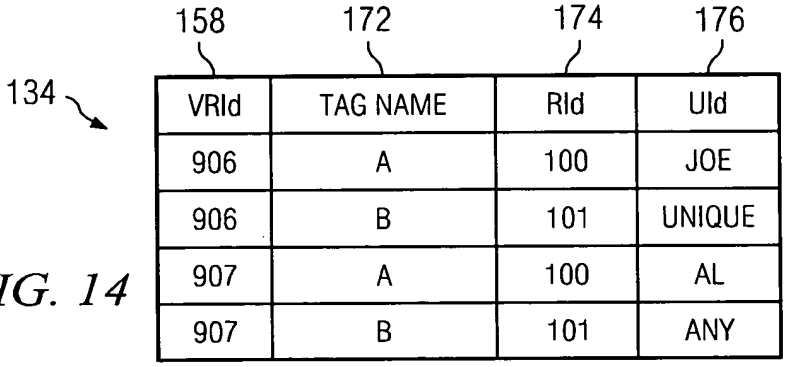

FIG. 14

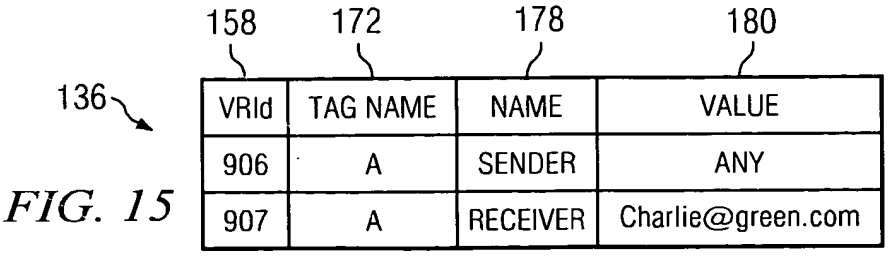

FIG. 15